

CLAIMS

What is claimed is:

1 1. A method for automatically selecting and assigning non-overlapping private IP
2 addresses comprising the steps of:

3 setting an internal address space to a default private IP address space;

4 receiving a provider private IP address and range;

5 determining if the default private IP address space overlaps with the provider
6 private IP address and range; and

7 if the default private IP address space overlaps with the provider private IP
8 address and range, selecting a largest available non-overlapping private IP address
9 space.

1 2. The method of claim 1 further comprising the step of requesting the provider
2 private IP address and range.

1 3. The method of claim 1 wherein the step of selecting further comprises iterating
2 through each available private IP address space to find the largest available non-
3 overlapping private IP address space.

1 4. The method of claim 1 further comprising the step of selecting from the default
2 IP address space a private IP address and assigning the selected private IP address to a
3 network device if the default private IP address space does not overlap with the
4 provider private IP address and range.

1 5. The method of claim 1 further comprising the step of selecting a private IP
2 address from the largest available non-overlapping private IP address space and
3 assigning the selected private IP address to a network device if the default private IP
4 address space overlaps with the provider private IP address and range.

1 6. A system for automatically selecting and assigning non-overlapping private IP
2 addresses comprising:
3 means for setting an internal address space to a default private IP address space;
4 means for receiving a provider private IP address space;
5 means for determining if the default private IP address space overlaps with the
6 provider private IP address space; and
7 means for selecting a largest available non-overlapping private IP address space
8 if the default private IP address space overlaps with the provider private IP address
9 space.

1 7. The system of claim 6 further comprising means for iterating through available
2 private IP address space to find the largest available non-overlapping private IP
3 address space if the default private IP address space overlaps with the provider private
4 IP address space.

1 8. The system of claim 6 further comprising means for selecting from the default IP
2 address space a private IP address, and assigning the selected private IP address to a
3 network device if the default private IP address space does not overlap with the
4 provider private IP address space.

1 9. The system of claim 6 further comprising means for selecting a private IP address
2 from the largest available non-overlapping private IP address space and assigning the
3 selected private IP address to a network device if the default private IP address space
4 overlaps with the provider private IP address space.

1 10. A machine readable medium having embodied thereon a program being
2 executable by a machine to perform method steps for selecting and assigning non-
3 overlapping private IP addresses, the method steps comprising:
4 setting an internal address space to a default private IP address space;
5 receiving a provider private IP address space;
6 determining if the default private IP address space overlaps with the provider
7 private IP address space; and
8 if the default private IP address space overlaps with the provider private IP
9 address space, then selecting a largest available non-overlapping private IP address
10 space.

1 11. The machine readable medium of claim 10 further comprising the method step of
2 iterating through available private IP address space to find the largest available non-
3 overlapping private IP address space if the default private IP address space overlaps
4 with the provider private IP address space.

1 12. The machine readable medium of claim 10 further comprising the method steps
2 of selecting from the default IP address space a private IP address and assigning the
3 selected private IP address to a network device if the default private IP address space
4 does not overlap with the provider private IP address space.

1 13. The machine readable medium of claim 10 further comprising the method steps
2 of selecting a private IP address from the largest available non-overlapping private IP
3 address space and assigning the selected private IP address to a network device if the
4 default private IP address space overlaps with the provider private IP address space.

1 14. An apparatus capable of automatically selecting and assigning non-overlapping
2 private IP addresses to devices within a local network, comprising:
3 an IP module, the IP module setting an internal address space to a default
4 address space;
5 a client module coupled to the IP module for determining a private IP address
6 assigned to a gateway device; and
7 a server module coupled to the IP module for automatically assigning a non-
8 overlapping private IP address to a network device.

1 15. The apparatus of claim 14 wherein the client module is a Dynamic Host
2 Configuration Protocol client.

1 16. The apparatus of claim 14 wherein the client module is a Point-to-Point Protocol
2 client.

1 17. The apparatus of claim 14 wherein the server module is a Dynamic Host
2 Configuration Protocol server.

1 18. The apparatus of claim 14 wherein the IP module determines if the default
2 private IP address space overlaps with the private IP address assigned to the gateway
3 device.

1 19. The apparatus of claim 18 wherein the IP module iterates through available
2 private IP address space to find a largest available non-overlapping private IP address
3 space if the default private IP address space overlaps with the private IP address
4 assigned to the gateway device.